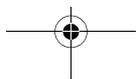
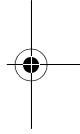
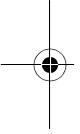
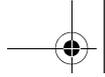
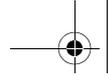


INSTRUCTION MANUAL
ROTATING LASER **RL-H3C**
 RL-H3CL
 RL-H3CS







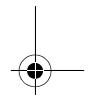
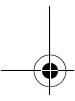
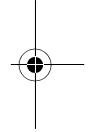
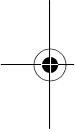
Introduction

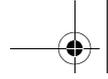
Thank you for purchasing the TOPCON Rotating Laser.

The instrument has many unique features. For basic operation, rough level the instrument and press power switch. It will self-level, then emit a rotating laser beam.

The RL-H3CS Rotating Laser creates a level reference plane. The laser provides controls that allow the beam plane to be tilted up to 5 degrees for single slope applications.

For superior product performance, please read these instructions carefully and keep them in a convenient place for future reference.





STANDARD PACKAGE COMPONENTS

Upon opening, make sure that all the followings are included:

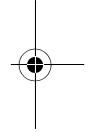
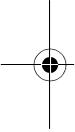
RL-H3C / RL-H3CL

- 1 RL-H3C / RL-H3CL Instrument 1set
- 2 LS-70B/70C* Laser Sensor 1set
- 3 Size "C" dry batteries (R14PU) 4pc.
- 4 9 volt dry battery (6F22/S-006P) 1pc.
- 5 Carrying case 1pc.
- 6 Instruction manual 1vol.
- 7 Model-6 Laser Sensor Holder 1pc.

* LS-70B is included for some markets instead of LS-70C

RL-H3CS

- 1 RL-H3CS Instrument 1set
- 2 LS-70B Laser Sensor 1set
- 3 Size "C" dry batteries (R14PU) 4pc.
- 4 9 volt dry battery (6F22/S-006P) 1pc.
- 5 Carrying case 1pc.
- 6 Instruction manual 1vol.
- 7 Model-6 Laser Sensor Holder 1pc.



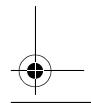
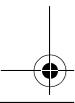
GENERAL HANDLING PRECAUTIONS

Before starting work or operation, be sure to check that the instrument is functioning correctly with normal performance.

When storing the instrument for long period, remove the batteries. Always make sure instrument is dry before putting it in the carrying case. Never store a damp instrument.

STORAGE PRECAUTIONS

Always clean the instrument after use.
Use a clean cloth moistened with neutral detergent or water.
Never use an abrasive cleaner, ether, thinner benzene, or other solvents.
Always make sure the instrument is completely dry before storing. Dry any moisture with a soft, clean cloth.



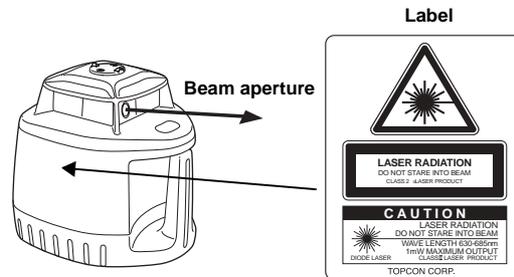
Safety

DISPLAY FOR SAFE USE

In order to ensure the safe use of this product, prevent any danger to the operator or others, or damage to property, important warnings are placed on the product and inserted in the instruction manual. We recommend that you become familiar with the meaning of these Warnings and Cautions before continuing.

Display	Meaning
 WARNING	Ignoring or disregard of this display may lead to the danger of death or serious injury.
 CAUTION	Ignoring or disregard of this display may lead to personal injury or physical damage.

- Injury refers to hurt, burn, electric shock, etc.
- Physical damage refers to extensive damage to equipment and structure or furnishings.



WARNINGS AND CAUTIONS

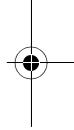
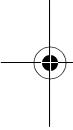
 WARNING
<ul style="list-style-type: none"> • There is a risk of fire, electric shock or physical harm if you attempt to disassemble or repair the instrument yourself. This is only to be carried out by TOPCON or an authorized dealer, only !
<ul style="list-style-type: none"> • May ignite explosively. Never use an instrument near flammable gas, liquid matter, and do not use in a coal mine.
<ul style="list-style-type: none"> • Cause eye injury or blindness. Do not stare into beam.
<ul style="list-style-type: none"> • Risk of fire or electric shock. Do not use a wet battery.
<ul style="list-style-type: none"> • Battery can cause explosion or injury. Do not dispose in fire or heat.
<ul style="list-style-type: none"> • The short circuit of a battery can cause a fire. Do not short circuit battery when storing it.

 CAUTION
<ul style="list-style-type: none"> • Use of controls or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.
<ul style="list-style-type: none"> • Do not stand or sit on the carrying cases. It could overturn, causing injury.
<ul style="list-style-type: none"> • Do not use a damaged instrument case. It could accidentally open causing damage to the instrument or injury to people.
<ul style="list-style-type: none"> • Do not place yourself or a reflecting object in the path of the laser beam. If using the laser outside, avoid positioning it anywhere near eye level to avoid any possibility of it striking someone in the eye. If this should happen, visibility could be temporarily impaired, causing disorientation and possible accidental injury.
<ul style="list-style-type: none"> • Please note that the tips of tripod can be hazardous, be aware of this when setting up or carrying the tripod.
<ul style="list-style-type: none"> • Do not allow skin or clothing to come into contact with acid from the batteries, if this does occur then wash off with copious amounts of water and seek medical advice.
<ul style="list-style-type: none"> • Do not place instrument on unstable platform, surface or tripod. If using tripod, make sure instrument is securely attached.
<ul style="list-style-type: none"> • Risk of injury by falling down a tripod and an instrument. Always check that the screws of tripod are tightened.



Exceptions from Responsibility

- 1 The user of this product is expected to follow all operating instructions and make periodic checks of the product's performance.
- 2 The manufacturer, or its representatives, assumes no responsibility for results of a faulty or intentional usage or misuse including any direct, indirect, consequential damage, and loss of profits.
- 3 The manufacturer, or its representatives, assumes no responsibility for consequential damage, and loss of profits by any disaster, (an earthquake, storms, floods etc.), fire, accident, or an act of a third party and/or a usage in other than usual conditions.
- 4 The manufacturer, or its representatives, assumes no responsibility for any damage, and loss of profits due to a change of data, loss of data, an interruption of business etc., caused by using the product or an unusable product.
- 5 The manufacturer, or its representatives, assumes no responsibility for any damage, and loss of profits caused by usage other than explained in the user manual.
- 6 The manufacturer, or its representatives, assumes no responsibility for damage caused by wrong movement, or action due to connecting with other products.

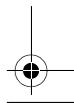
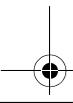


Laser Safety

This product uses a visible laser beam, and is manufactured and sold in accordance with "Performance Standards for Light-Emitting Products" (FDA/BRH 21 CFR 1040) or "Radiation Safety of Laser Products, Equipment Classification, Requirements and User's Guide" (IEC Publication 60825-1) provided on the safety standards for laser products. As per the said standard, this product is classified as a "Class II Laser Product" or "Class 2 Laser Product".

This is a simple product to operate and does not require training from a laser safety officer.

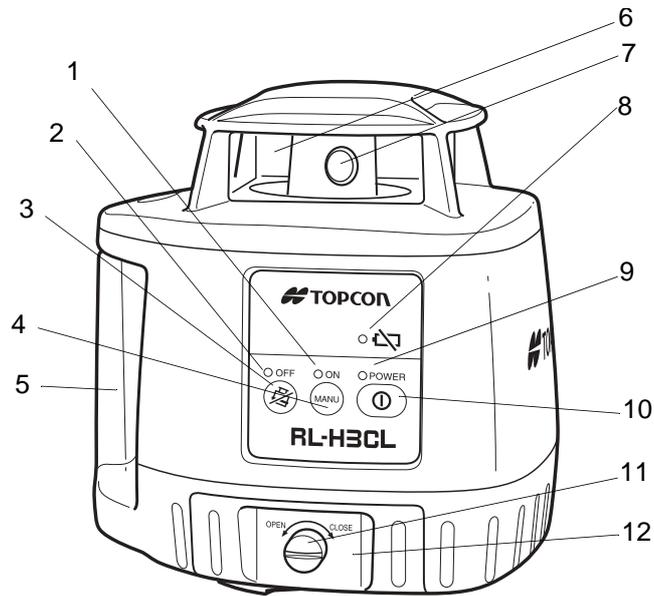
In case of any failure, do not disassemble the instrument.
Contact TOPCON or your TOPCON dealer.



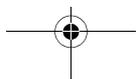
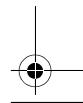
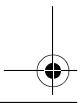
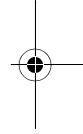
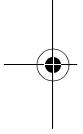


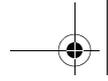
Nomenclature and functions

RL-H3C / RL-H3CL



RL-H3C / RL-H3CL





1. **Manual mode ON (Red LED)**
Auto leveling does not function.
2. **Height alert OFF (Red LED)**
Height alert does not function.
3. **Height alert OFF switch**
OFF: Push twice continuously.
ON: Push once.
4. **Manual mode ON switch**
ON: Push twice continuously.
OFF: Push once.
5. **Handle**
6. **Protective glass**
7. **Rotary head**
Laser beam emits from here.
8. **Battery power (Red LED)**
Blinking: The power is low, but laser is still usable. (Blinking continues for one minute.)
On Solid: Dead batteries. Replace the batteries with new ones. (The lamp is solid for five minutes, then turned off automatically.)
9. **Auto leveling (Green LED)**
Blinking slowly: Auto levelling is in process.
Blinking quickly: Auto levelling is almost complete.
On Solid: Auto levelling is complete.
10. **Power switch**
Turn the instrument ON or OFF.
11. **Battery door knob**
12. **Battery door**

Height alert function

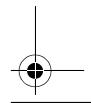
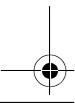
(Safety lock system)

When auto-leveling and height alert function are active, after the laser beam emits for one minute, this function prevents the instrument from operating if it is disturbed. This insures accurate control. If the unit is disturbed, all lamps will blink except battery power lamp. The elevation (height of instrument) should be verified and re-established if necessary. This function is not active in the manual mode.

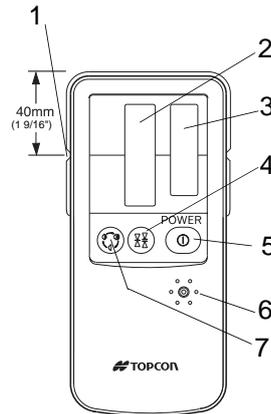
Note

In manual mode

- Auto-leveling function is not active.
- Height alert function is not active.



LS-70B/70C (Laser Sensor)



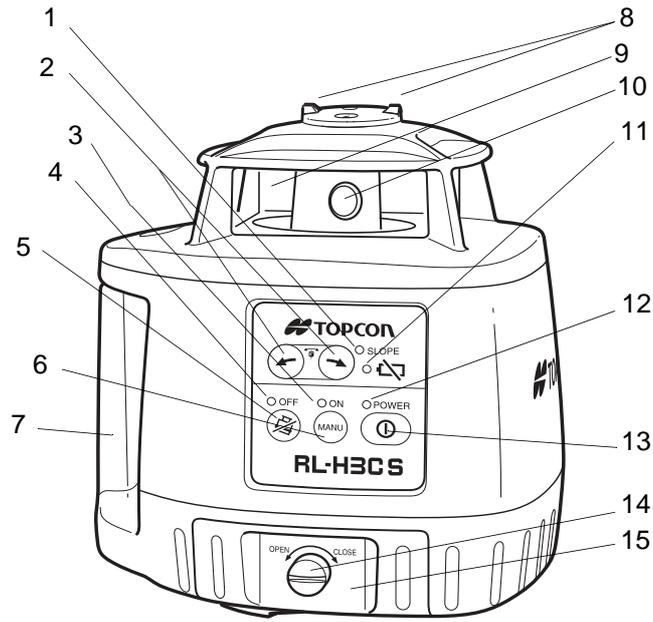
1. **On-Grade Index**
2. **Beam receiving window**
Turn the beam receiving window side towards RL-H3C to detect the laser beam.
3. **Indicator**
Detect the on-grade position "---" by moving the Laser Sensor up and down. Directional arrows and audio signals assist in locating the on-grade position as the laser strikes the beam receiving window. (Top of Laser Sensor is 40mm (1 9/16") from on-grade index for offset marking.)
LS-70B: The indicators are located on front and back sides of the instrument.
LS-70C: The indicator is located only on front side.
4. **On-Grade precision switch**
Two on-grade precision options are available, normal precision and high precision. By pressing this switch, the precision options are switched alternately. Confirm the precision choice by the indicator. (Normal precision is the default setting each time the sensor is turned on.
See LS-70B/70C Indicator diagram below.)
5. **Power switch**
The power switch turns ON or OFF by pressing. If the power switch is turned ON, all signs will be displayed on the indicator for a second with a beep sound.
6. **Buzzer speaker**
7. **Buzzer sound switch**
Volume of the sensor buzzer can be alternately switched to LOW/LOUD/OFF by pressing the switch.

Auto shut off function

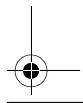
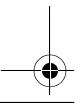
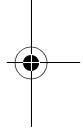
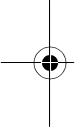
The power will be turned off automatically if no laser beam is detected for approx. 30 min. (To turn on the laser sensor, press the power switch again.)

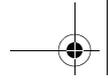


RL-H3CS



RL-H3CS





1. **Slope lamp (Green LED)**
Red: Error.
2. **Slope key**
Tilts beam plane in direction of arrow.
3. **Manual mode ON (Red LED)**
Auto leveling does not function.
4. **Height alert OFF (Red LED)**
Height alert does not function.
5. **Height alert OFF switch**
OFF: Push twice continuously.
ON: Push once.
6. **Manual mode ON switch**
OFF: Push twice continuously.
ON: Push once.
7. **Handle**
8. **Sight**
9. **Protective glass**
10. **Rotary head**
Laser beam emits from here.
11. **Battery power (Red LED)**
Blinking: The power is low, but laser is still usable. (Blinking continues for one minute.)
On Solid: Dead batteries. Replace the batteries with new ones. (The lamp is solid for five minutes, then turned off automatically.)
12. **Auto leveling (Green LED)**
Blinking slowly: Auto levelling is in process.
Blinking quickly: Auto levelling is almost complete.
On Solid: Auto levelling is complete.
13. **Power switch**
Turn the instrument ON or OFF.
14. **Battery door knob**
15. **Battery door**

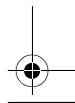
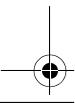
Height alert function
(Safety lock system)

When auto-leveling and height alert function are active, after the laser beam emits for one minute, this function prevents the instrument from operating if it is disturbed. This insures accurate control. If the unit is disturbed, manual mode ON lamp, height alert OFF lamp and auto leveling lamp will blink simultaneously. The elevation (height of instrument) should be verified and re-established if necessary. This function is not active in the manual mode.

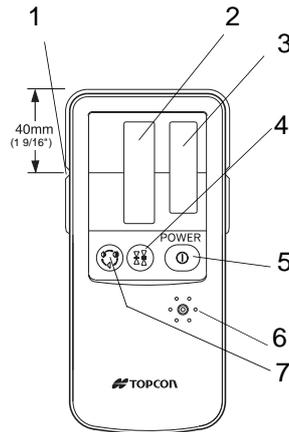
Note

In manual mode

- Auto-leveling function is not active.
- Height alert function is not active.
- Setting slope function is not active.



LS-70B (Laser Sensor)



1. **On-Grade Index**
2. **Beam receiving window**
Turn the beam receiving window side towards RL-H3CS to detect the laser beam.
3. **Indicator**
Detect the on-grade position "..." by moving the Laser Sensor up and down. Directional arrows and audio signals assist in locating the on-grade position as the laser strikes the beam receiving window. (Top of Laser Sensor is 40mm (1 9/16") from on-grade index for offset marking.)
LS-70B: The indicators are located on front and back sides of the instrument.
4. **On-Grade precision switch**
Two on-grade precision options are available, normal precision and high precision. By pressing this switch, the precision options are switched alternately. Confirm the precision choice by the indicator. (Normal precision is the default setting each time the sensor is turned on. See LS-70B/70C Indicator diagram below.)
5. **Power switch**
The power switch turns ON or OFF by pressing. If the power switch is turned ON, all signs will be displayed on the indicator for a second with a beep sound.
6. **Buzzer speaker**
7. **Buzzer sound switch**
Volume of the sensor buzzer can be alternately switched to LOW/LOUD/OFF by pressing the switch.

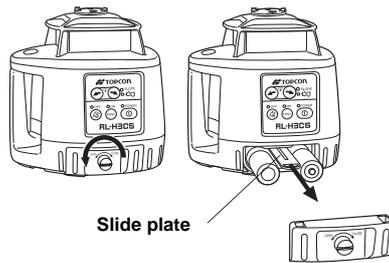
Auto shut off function

The power will be turned off automatically if no laser beam is detected for approx. 30 min. (To turn on the laser sensor, press the power switch again.)

BATTERY REPLACEMENT

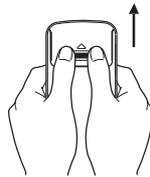
- 1 Remove the battery cover by turning battery cover knob to "OPEN" side.
- 2 Remove the batteries by pulling out the slide plate.
- 3 Install the new batteries referring to the illustration on the battery cover.
*1, *2, *3
- 4 Install the battery cover. By using a coin, tighten the battery cover knob to "CLOSE" side until the knob does not turn.*4

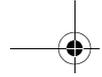
- *1 Replace all 4 batteries with new ones at the same time. Do not mix used and new batteries, and do not mix different types of batteries together.
- *2 Use alkaline dry cells. (Dry cells for movement confirmation are packed in shipment.) Nickel hydrogen dry cells and nickel cadmium dry cells can be used too, but the operating time is different from the time of alkaline dry cells.
- *3 Generally, performances of dry cell deteriorate temporarily in low temperature, but recover in normal temperature.
- *4 It is important to use a coin or other tool to make sure cover is firmly closed to seal out-water.



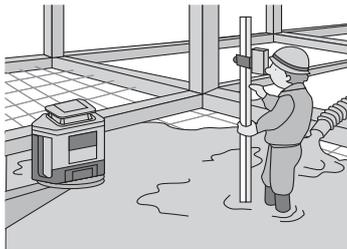
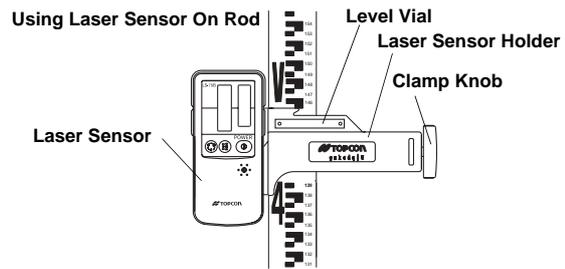
Laser Sensor

- 1 Press the lid in the direction of the arrow to lift.
- 2 Remove the battery and replace with a new 9v alkaline battery.
- 3 Press the lid down and click to close.





EXAMPLES OF TYPICAL USE



Operation

HOW TO OPERATE

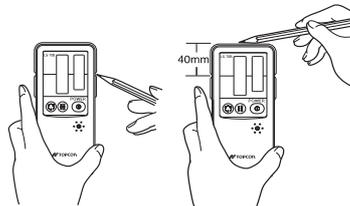
- 1 Set the instrument to the tripod or smooth surface.
- 2 Make sure instrument is roughly level ($\pm 3^\circ$).
- 3 Press power switch (ON).
- 4 Press power switch on laser sensor (ON).
- 5 Select the precision mode by pressing the On-Grade precision switch.
- 6 Locate the on-grade position "----" by moving the laser sensor up and down.



LS-70B Indicator	
	High precision mode
	Normal precision mode
	Above grade indicator Move the sensor down. Audio signal: High pitch, frequent beep
	On-Grade position Audio signal: Continuous beep sound
	Below grade indicator Move the sensor up. Audio signal: Lower pitch, slower frequency
	Battery remaining display

When using the Laser Sensor with other select Topcon lasers, these symbols alert user if laser batteries are low or if laser has been disturbed. These symbols are not active when used with the Rotating

- 1 Mark the position of On-Grade index.
(Top of the Laser Sensor is 40mm [1 9/16"] from index for offset marking.)

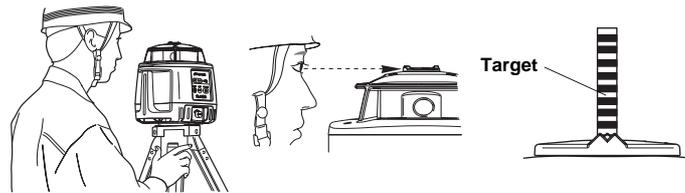


RL-H3CS

Aligning Direction of Slope

When using the laser to set the slope, the laser must be properly aligned so the slope axis of the laser beam is parallel to the desired direction of slope. The sight on top of the instrument is calibrated to the slope axis of the laser beam. Follow the steps below to align the laser to the desired direction of slope:

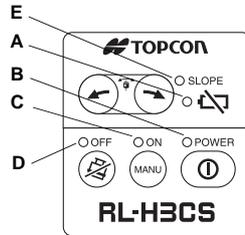
- 1 Establish a target line parallel to desired direction of slope.
- 2 Set up the laser over this line (drop a plumb bob from the tripod mounting screw).
- 3 Rough align the instrument to the direction of slope. Make sure it is properly oriented for the slope to be set.
- 4 Using the sight, position the instrument so the sight is centered on the target. (see illustration below)



[Setting slope]

Operating procedure (Setting slope)	Key operation	Lamp display (Refer to the illustration above)
1 Press Power switch ON. You can set the slope after auto-leveling is completed.	Power switch	During auto-leveling: Lamp B (Green) blinks. After auto-leveling is completed: Lamp B (Green) lights.
2 Press either Slope key once. The laser beam begins to move in the direction of the arrow on the key.	After auto-leveling is completed. Slope key	Lamp E (Green) blinks quickly.
3 Press Slope key again to stop the laser beam.	Slope key	Lamp E (Green) lights.
4 Press Slope key to fine adjust the slope. Beam movement begins slowly, then increases depending on how long the Slope key is pressed. The blinking speed of the lamp provides a visual indication of the beam movement speed.	Slope key	When Slope key is not pressed: Lamp E (Green) lights. Slope key Lamp E (green) Beam movement Press for a shorter time :Blinks slowly :Moves slowly ↖↖↖ ↓↖↖↖↖↖ ↖↖↖↖↖ ↓ ↓ Press for a longer time :Blinks quickly :Moves quickly
5 Press Power switch OFF to cancel the slope setting.	Power switch	All lamps are OFF.

Operating procedure (Recalling slope)	Key operation	Lamp display (Refer to the illustration above)
<p>1 To recall the previous slope setting (the setting before power was OFF), press Power switch ON while pressing either the right or left Slope key. The slope can then be adjusted as described in step 4 above.</p> <ul style="list-style-type: none"> When the Power switch is ON without the Slope key pressed, the laser beam will return to level. 	<p>Slope key + Power switch</p>	<p>When Slope key is not pressed: Lamp E (Green) lights. Slope key Lamp E (green) Beam movement</p> <p>Press for a shorter time : Blinks slowly : Moves slowly</p> <p>Press for a longer time : Blinks quickly : Moves quickly</p>



Manual mode can be activated while the slope is set.
For information about Manual mode ON/OFF, refer to "NOMENCLATURE AND FUNCTIONS".

Check the beam often during slope use for slope accuracy. Check instrument calibration periodically (see below).

Checks and adjustments

1 Checking and adjusting calibration

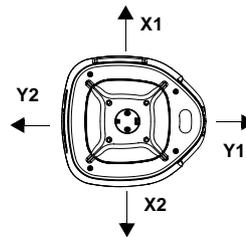
Horizontal calibration of the laser beam can be checked by the user.

[Checking]

- 1 Set up a tripod approx. 50m (160ft) from a wall. Mount the instrument on the tripod, facing the X1 side toward the wall.
- 2 Turn the instrument on and allow auto-leveling to complete.
- 3 Put the laser sensor in fine detection mode by pressing the On-Grade precision switch.
- 4 By using the laser sensor, mark the center position of laser beam on the wall. (X1)
- 5 Turn off the instrument.
Loosen the tripod screw, rotate the instrument 180 degrees and re-secure it on the tripod. The X2 side of the instrument faces toward the wall.
When rotating the instrument, avoid changing the height.
- 6 Turn the unit on again and allow auto-leveling to complete.
- 7 By using the laser sensor, mark the center position of laser beam on the wall. (X2)
- 8 If the difference value of marked two laser beam heights (difference value of X1 and X2) are less than the value specified in the next table, adjustments are not needed. If the difference value is greater than the value specified in the table, adjust the instrument as described below. *
- 9 Check the X1 (handle) side as the same way.

Type	Value
RL-H3C	7 mm
RL-H3CL	5 mm
RL-H3CS	7 mm

*If the difference value is greater than 60mm (2 3/8 inches), contact your Topcon dealer.





[To calibrate the X axis]

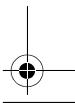
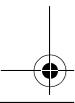
- 1 Face the X1 side of the instrument (panel side) toward a wall, press the Power switch while pressing the height alert OFF switch. Then the height alert OFF lamp will light, and manual mode ON lamp will blink.
- 2 Press the height alert OFF switch to calibrate the X axis. The manual mode ON lamp will light. When auto-leveling finishes, the laser beam will emit.
- 3 Using the laser sensor, mark the on-grade height of laser beam on a wall.
- 4 Rotate the instrument 180 degrees to face X2 side toward a wall.
- 5 In the same way as step **3** , mark the on-grade height of laser beam on a wall.
- 6 By pressing the manual mode ON switch (laser beam moves up), or Power switch (laser beam moves down), adjust the on-grade height of the beam until it is precisely centered between the marks made in steps **3** and **5** .
- 7 Press the height alert OFF switch to memorize the new laser beam calibration. The height alert OFF lamp will blink. Power will shut off automatically when the calibration memorization is complete.

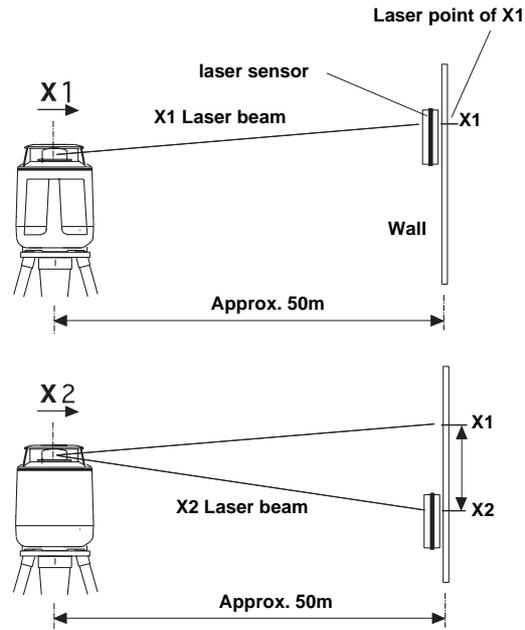
[To calibrate the Y axis]

- 1 Face the Y1 side of the instrument (handle side) toward a wall, press the Power switch while pressing the height alert OFF switch. Then the height alert OFF lamp will light, and manual mode ON lamp will blink.
- 2 Press the Power switch again. The auto leveling lamp will light.
- 3 Press the height alert OFF switch to calibrate the Y axis. The auto leveling lamp will light.
- 4 Using the laser sensor, mark the on-grade height of laser beam on a wall.
- 5 Rotate the instrument 180 degrees to face Y2 side toward a wall.
- 6 In the same way as step **4** , mark the on-grade height of laser beam on a wall.
- 7 By pressing the manual mode ON switch (laser beam moves up), or Power switch (laser beam moves down), adjust the on-grade height of the beam until it is precisely centered between the marks made in steps **4** and **6** .
- 8 Press the height alert OFF switch to memorize the new laser beam calibration. The height alert OFF lamp will blink. Power will shut off automatically when the calibration memorization is complete.

To discontinue calibration the instrument, press the Power switch while pressing the height alert OFF switch.

When calibration is memorizing, if the height alert lamp continues to blink quickly and power does not shut-off automatically, please contact your local Topcon dealer.



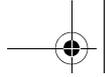


2 Checking cone error

Perform the following check after completing horizontal calibration procedure.

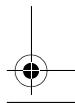
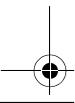
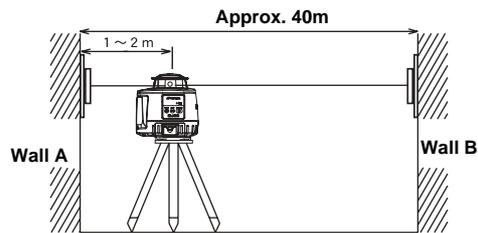
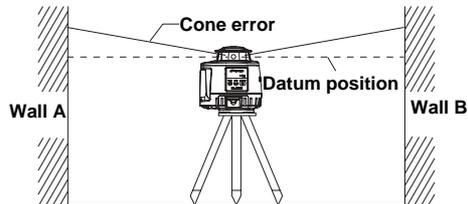
[Checking]

- 1 Set up the laser centered between two walls approximately 40m (131ft) apart. Orient the instrument so one axis, either X or Y, is facing the walls.
- 2 Locate and mark the position of the rotating laser beam on both walls using the laser sensor.
- 3 Turn off the instrument and move the instrument closer to wall A (1m to 2m / 3 ft to 6 ft). Do not change the axis orientation of the instrument. Turn the instrument on.
- 4 Again locate and mark the position of the rotating laser beam on both walls using the laser sensor.



- 5 Measure the distance between the first and second marks on each wall.
If the difference between each set of marks is less than 4mm (5/32 of an inch), no error exists.

*If the difference value is greater than 4mm(5/32 inch), contact your Topcon dealer.

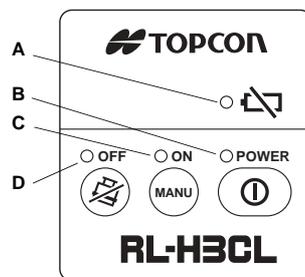


3 Error Code

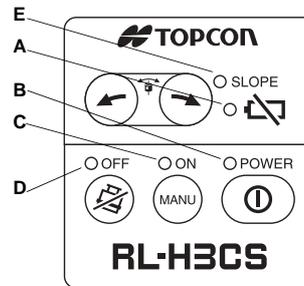
Use the table below to determine operation errors indicated by blinking lamps on the control panel. If corrective action listed does not correct error, please contact your local Topcon dealer.

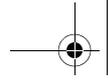
Lamp Indication	Error Code	Corrective Action
Lamp B, C and D blink in turn	Auto-leveling range error	Correct tilt of the instrument until it less than 3 degrees.
Lamp A lights	Battery power error	Replace all 4 batteries with new ones at the same time.
Lamp B, C and D blink simultaneously	Height alert error	Turn power off, rough level the instrument; then turn power on again. Check height of laser beam as it may have changed.
Lamp D blinks quickly	Calibration error	Repeat calibration procedure. If error repeats contact your local Topcon dealer.
Lamp E (Red) lights Lamp B, C and D blink in turn	Slope setting range error	Push the slope key of the opposite side, and align slope.
Lamp A, B, C and D blink simultaneously	Internal error	Turn power off, then on again. If error repeats contact your local Topcon dealer.

RL-H3C / RL-H3CL



RL-H3CS

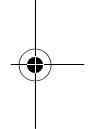
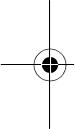




Specifications

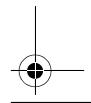
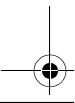
RL-H3C

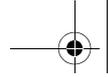
Accuracy	: $\pm 3.6\text{mm}/50\text{m}$ (± 15 ")
Automatic correction range	: $\pm 3^\circ$
Beam detecting range	: Approx. 2m~300m diameter (6ft~980ft)
Rotational speeds	: 600r.p.m
Laser source	: Laser diode (Visible, Red)
Laser power output	: 0.8mW (Max.)
Laser class	: Class 2 laser product
Power supply	: Four C size alkaline manganese dry batteries
Operating time	: Approx. 60 hours at $+20^\circ\text{C}$ ($+68^\circ\text{F}$)
Protection against water and dust	: IP56 (Based on the standard IEC60529)
Operating temperature	: $-20^\circ\text{C}\sim+50^\circ\text{C}$ ($-4^\circ\text{F}\sim+122^\circ\text{F}$)
Dimensions	: 167(L)x182(W)x189(H)mm (6.5x7.1x7.4 in)
Weight	: 1.9kg[4.1lbs] (With dry batteries)



LS-70B/70C

Beam detection window	: 50mm (2.0 in)
Beam detection precision	: High precision : $\pm 1\text{mm}$ (± 0.04 in) : Normal precision : $\pm 2\text{mm}$ (± 0.08 in)
Beam detection indication	: Liquid crystal and buzzer
Power source	: DC 9V alkaline (dry) battery
Operating time	: Approx. 80 hours at $+20^\circ\text{C}$ ($+68^\circ\text{F}$) (Using alkaline manganese dry batteries)
Auto shut-off delay	: Approx. 30 minutes without beam detection
Operating temperature	: $-20^\circ\text{C}\sim+50^\circ\text{C}$ ($-4^\circ\text{F}\sim+122^\circ\text{F}$)
Dimensions	: 165(L)x78(W)x26(H)mm (6.5x3.0x1.0 in)
Weight	: 0.25 kg [0.55 lbs] (With dry batteries)



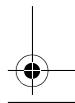
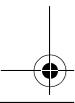


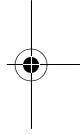
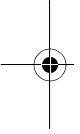
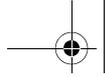
RL-H3CS

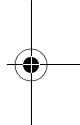
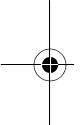
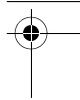
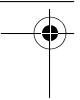
Accuracy	: $\pm 3.6\text{mm}/50\text{m}$ ($\pm 15''$)
Automatic correction range	: $\pm 5^\circ$
Beam detecting range	: Approx. 2m~300m diameter (6ft~980ft)
Rotational speeds	: 600 r.p.m
Laser source	: Laser diode (Visible, Red)
Laser power output	: 0.8 mW (Max.)
Laser class	: Class 2 laser product
Power supply	: Four C size alkaline manganese dry batteries
Operating time	: Approx. 60 hours at $+20^\circ\text{C}$ ($+68^\circ\text{F}$)
Protection against	
water and dust	: IP56 (Based on the standard IEC60529)
Operating temperature	: $-20^\circ\text{C}\sim+50^\circ\text{C}$ ($-4^\circ\text{F}\sim+122^\circ\text{F}$)
Dimensions	: 167(L)x182(W)x193(H)mm (6.5x7.1x7.6 in)
Weight	: 1.9 kg[4.1lbs] (With dry batteries)

LS-70B

Beam detection window	: 50 mm (2.0 in)
Beam detection precision	: High precision : $\pm 1\text{ mm}$ ($\pm 0.04\text{ in}$) Normal precision : $\pm 2\text{ mm}$ ($\pm 0.08\text{ in}$)
Beam detection indication	: Liquid crystal and buzzer
Power source	: DC 9 V alkaline (dry) battery
Operating time	: Approx. 80 hours at $+20^\circ\text{C}$ ($+68^\circ\text{F}$) (Using alkaline manganese dry batteries)
Auto shut-off delay	: Approx. 30 minutes without beam detection
Operating temperature	: $-20^\circ\text{C}\sim+50^\circ\text{C}$ ($-4^\circ\text{F}\sim+122^\circ\text{F}$)
Dimensions	: 165(L)x78(W)x26(H)mm (6.5x3.0x1.0 in)
Weight	: 0.25 kg [0.55 lbs] (With dry batteries)







TOPCON POSITIONING SYSTEMS, INC.

5758 West Las Posas Blvd., Pleasanton, CA 94588, U.S.A.
Phone: 925-460-1300 Fax: 925-460-1315 www.topcon.com

TOPCON CALIFORNIA

3380 Industrial Blvd, Suite 105, West Sacramento, CA 95691, U.S.A.
Phone: 916-374-4675 Fax: 916-374-4329

TOPCON MIDWEST

891 Busak Road, Elk Grove Village, IL 60007, U.S.A.
Phone: 847-734-1700 Fax: 847-734-1712

TOPCON EUROPE B.V.

Estadestraat 11, 2008 LA Capelle a/d IJssel, The Netherlands.
Phone: 010-4585077 Fax: 010-4585045 www.topconeuropa.com

TOPCON BELGIUM

Premakster 6, 1700 Meeuwen, Belgium
Phone: 053-37-45-48 Fax: 053-37-45-79

TOPCON DEUTSCHLAND G.m.b.H.

Waldkirch 150, 42395 Essen, GERMANY
Phone: 0201-8619-100 Fax: 0201-8619-111 ps@topcon.de
www.topcon.de

TOPCON S.A.R.L.

89, Rue de Paris, 92585 Clichy, Cedex, France.
Phone: 33-1-41098490 Fax: 33-1-47393201 topcon@topcon.fr

TOPCON ESPAÑA S.A.

HEAD OFFICE
Friedrich Mompou S, ED. Euro 3, 08960, Sant Just Desvern Barcelona, Spain.
Phone: 93-473-4057 Fax: 93-473-3932 www.topconesp.com

MADRID OFFICE

Avenida Burgos, 14E, 1 28036, Madrid, Spain.
Phone: 91-352-4129 Fax: 91-383-3690

TOPCON SCANDINAVIA A. B.

Neorgatan 2 S-43151 Mölndal, SWEDEN
Phone: 031-7105200 Fax: 031-7105249

TOPCON (GREATBRITAIN) LTD.

HEAD OFFICE
Topcon House Kennel Side, Bore Lane, Newbury, Berkshire RG14 5PX U.K.
Phone: 44-1635-651120 Fax: 44-1635-651170
suney.saito@topcon.co.uk israr.saito@topcon.co.uk

TOPCON SOUTH ASIA PTE. LTD.

BK 192 Pandan Loop, Paritech Industrial Complex, #07-01, Singapore 128381
Phone: 67700223 Fax: 67700540 www.topcon.com.sg

TOPCON AUSTRALIA PTY. LTD.

408 Victoria Road, Gladstone, NSW 2111, Australia
Phone: 02-9817-4666 Fax: 02-9817-4654 www.topcon.com.au

TOPCON INSTRUMENTS (THAILAND) CO., LTD.

77162 Sann Sattorn Tower, 37th Fl.,
Kongthorbari Rd., Kongkreng, Kongsam, Bangkok 10500 Thailand.
Phone: 662-440-1102-7 Fax: 662-440-1158

TOPCON INSTRUMENTS (MALAYSIA) SDN. BHD.

Excella Business Park Block C, Ground & 1st Floor, Jalan Ampang Putra,
Taman Ampang Hill, 55100 Kuala Lumpur, MALAYSIA
Phone: 03-42761068 Fax: 03-42764568

TOPCON KOREA CORPORATION

2F Yoonseong Bldg., 159-3, Seodae-Dong, Seodong-gu, Seoul, 137-876, Korea.
Phone: 82-2-2095-0321 Fax: 82-2-2095-0319 www.topcon.co.kr

TOPCON OPTICAL (H.K.) LIMITED

2/F, Meeop Industrial Bldg., No. 33-35, Au-Pok Wan Street, Fo Tan Road,
Sha Tin, N. T., Hong Kong
Phone: 2639-1328 Fax: 2639-2221 www.topcon.com.hk

TOPCON CORPORATION BEIJING OFFICE

Room No. 902 Poly Plaza Building, 14 Dongzhimen Nandajie,
Dongzhimen District, Beijing, 100027, China
Phone: 10-6501-4191-2 Fax: 10-6501-4190

TOPCON CORPORATION BEIRUT OFFICE

P. O. BOX 70-1002 Amalias, BEIRUT, LEBANON
Phone: 961-4-52102091-4-5210208 Fax: 961-4-5211119

TOPCON CORPORATION DUBAI OFFICE

P.O. Box 28596, 102, Al Nahj Bldg., 248 Abu Hal Road, Deira, Dubai, UAE
Phone: 971-4-2696511 Fax: 971-4-2696272

TOPCON CORPORATION

75-1 Hasunuma-cho, Iwabashi-ku, Tokyo 174-8580, Japan
Phone: 3-3558-2520 Fax: 3-3560-4214 www.topcon.co.jp

